NETWORK FOR NEW ENERGY CHOICES
A new world of energy choices...is in our power!

October 12, 2006

Commissioners
Regulatory Commission of Alaska
701 West Eighth Avenue, Suite 300
Anchorage, Alaska 99501

R-06-005

RE: Comments on the Proposed Amendments to the Public Utilities Regulatory Policies Act of 1978

Dear Sirs/Madams,

The Network for New Energy Choices (NNEC) is a not-for-profit organization committed to providing local governments with ideas and information to generate clean, affordable power from local, renewable energy sources. Working with a growing coalition of nonprofit groups, municipal officials, business leaders and academics, NNEC promotes creative and objective ideas for financing community-based clean energy and advocates critical utility policy reforms based on original research.

As a representative of the Network for New Energy Choices, I want to thank the Commission for the opportunity to provide comments as the state considers a net metering program as required by the amended Public Utility Regulatory Policies Act. I look forward to working with the Commission and all stakeholders as we promote renewable energy for the benefit of all Alaskans.

Sincerely,

James Rose
Research Director

BEFORE THE STATE OF ALASKA
THE REGULATORY COMMISSION OF ALASKA

In the Matter of the Consideration of Adoption of Regulations to Implement Amendments to the Public Utilities Regulatory Policies Act of 1978 by the Energy Policy Act of 2005	))))	Docket No. R-06-5

Comments of James Rose, Network for New Energy Choices

Introduction

Alaska is facing challenges with climate change and rising energy costs. Net metering is an essential prerequisite for facilitating the expansion of renewable energy in the state. Net-metered systems provide numerous benefits including lower peak demand for electricity, better public health, more jobs, and economic growth.

The Network for New Energy Choices has a report slated for publication in November that analyzes statewide net metering programs. I will supplement these comments with the report upon its completion. My initial comments will address New Jersey's success story. From this case study, the commission can identify the best practices and rules for a net metering program.

Learn from the best: New Jersey's Net Metering Program

Since 2004, New Jersey's incentives for small-scale renewable energy, especially its generous net metering program, have been widely considered the best in the country and our analysis of statewide net metering programs confirms that New Jersey's program is the most effective.[1,2]

1 Fox, Jeanne M. 2005. Net Metering in New Jersey. August 3, 2005. Accessed August 3, 2006 at http://www.energypulse.net/centers/article/article_display.cfm?a_id=1065.

2 Reilly, Mike. 2005. Making Energy While the Sun Shines – Jersey's Program a Model for the Nation. *The Star Ledger* August 22, 2005 p. 13.

Two simple metrics quickly confirm the success of New Jersey's approach: First, the number of net metered customers after the program was implemented; and second, the cumulative potential capacity of the small-scale renewable energy systems installed since the program was initiated. By both of these measures, New Jersey has instituted a comprehensive program that other states would be wise to emulate.

Early results indicate that New Jersey is experiencing a tremendous rate of growth in both customer participation and the cumulative capacity of installed renewable energy systems.[3] In 2004, the first year under New Jersey's restructured net metering program, the number of net metering customers in the states increased from zero to more than 300.[4] Since then, the number of solar panels in New Jersey had increased more than fivefold to 1665.[5]

The rapid growth in customer participation can be traced to the process by which New Jersey restructured its program. By testing proposed changes against objective research and a clearly defined goal, New Jersey was able to craft net metering regulations that avoided the pitfalls bedeviling many other state programs.

Development of New Jersey's Legislation

New Jersey first adopted a net metering program in 1999. However, in 2004, New Jersey's Board of Public Utilities (BPU) ordered amendments which

3 While California has the highest raw numbers in either of these categories, New Jersey surpasses California in growth rate.

4 U.S. Dept. of Energy, Energy Information Agency. 2005/2006. Green Pricing and Net Metering Programs. http://www.eia.doe.gov/cneaf/solar.renewables/page/greenprice/greenpricing_netmetering04.pdf http://tonto.eia.doe.gov/FTPROOT/features/grnprcreport.pdf

5 New Jersey's Clean Energy Program. 2006. Supported Solar Installations. March 2006. Accessed August 3, 2006 at http://www.njcep.com/html/res-installed/solar-list.html.

strengthened the program significantly. [6] Without doubt, the strength of New Jersey's new program is due largely to how it originated as part of a comprehensive strategy, including generous rebates and tax incentives, to expand renewable energy statewide.

- ***A Foundation of Support from the Governor***

Although New Jersey already had demonstrated a strong commitment to clean energy, in 2003 Governor James McGreevey created a Renewable Energy Task Force charged with making recommendations on how the state could increase its consumption of renewable energy.[7] The Task Force concluded that the state should double its requirements for renewable energy production by 2008, and recommended a statewide goal of producing 20% of its energy from renewable sources by 2008.[8] Although the Task Force did not specifically recommend a new net metering law, the recommendations laid the foundation for significant amendments to the state's existing program.

- ***Strong Leadership from the Commission***

The Board of Public Utilities (BPU) was charged with implementing the recommendations of the Governor's Task Force. Although the Task Force had recommended a substantial increase in renewable energy generation, particularly solar, it had not specified exactly how to accomplish the increase. BPU's President, Jeanne Fox, who had also served as Task Force's chairperson, felt that a strong net metering law was necessary to meet the Task Force goal of 20% renewable production by 2008.[9] Fox believed that it was necessary to

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6 DSIRE. New Jersey – Net Metering. Accessed August 3, 2006 at http://www.dsireusa.org/library/includes/incentive2.cfm?Incentive_Code=NJ03R&state=NJ&CurrentPageID=1&RE=1&EE=1.

7 Renewable Energy Task Force. 2003. The Renewable Energy Task Force Report. Submitted to Governor James M. McGreevey, April 24, 2003. Accessed August 3, 2006 at http://www.state.nj.us/bpu/reports/RenEnergyTFR.pdf. Page 2.

8 New Jersey Board of Public Utilities. McGreevey Receives Renewable Energy Task Force Report. Accessed August 3, 2006 at http://www.state.nj.us/bpu/renewEnergy/renEnergy.shtml.

9 New Jersey Regulation Text. NJAC 14:4-9.1, 9.2, 9.3, 9.4 thru 9.11. Proposed Rule December 01, 2003. Board of Public Utilities. BPU Docket Number EX 03100795. Accessed August 3, 2006 via Westlaw.

enable customers to purchase and install larger systems than the state's previous net metering legislation if the state was to meet its renewable energy production goals. At Fox's recommendation, in 2004 the New Jersey legislature adopted a system size limit for net metered systems of 2 MW, the largest systems eligible under any existing net metering program in the nation.[10]

- ***Focusing on the Goals Rather than the Consensus***

Unlike many other states, New Jersey did not begin the process of amending its net metering regulations by trying to establish a consensus position with all stakeholders. A powerful Renewable Energy Task Force led by the President of the state's utility commission resulted in an approach to net metering law that kept as its focus the goal of allowing small-scale renewable energy to compete equally with conventional power. According to drafters of the legislation, New Jersey began the process of amending the state's net metering statute by trying to determine what would attract the distributed generation (DG) industry to the state. Drafters solicited the input of utility companies, but only adopted the recommended changes when they did not compromise the primary goal of expanding the state's DG market. Changes that would have impeded the development of statewide DG industry generally were overruled.

For example, New Jersey's statue allows only residential or "small commercial customers" to participate in the state's net metering program. So the precise definition of small commercial customers was critical to determining who would be eligible. A narrow definition would exclude customer classes that could provide more generation for meeting the state's goal. A broader definition would allow more potential customers to participate. The bill's drafters reviewed the programs in other states and decided on a definition of "small commercial customer" as non-residential customers with less than 10 MW (10,000 kW) of peak demand – a definition that was supported by the solar industry. The utilities, however, strenuously objected to this definition, and proposed a much smaller

10 Ibid

limit of 150 kW.[11] Had this definition been adopted it would have greatly reduced the number of commercial customers eligible for New Jersey's net metering program and would have artificially excluded larger potential generators. In the end, New Jersey's drafters rejected the utility recommendations and adopted a final rule that allows systems up to 2 MW in size to qualify as small commercial customers.[12]

- ***Linking Net Metering to Renewable Portfolio Standards***

New Jersey's amendment of its net metering program coincided with an aggressive expansion of the state's Renewable Portfolio Standard (RPS). RPS are laws that require utilities to produce a certain percentage of their power from renewable resources. New Jersey, which has had an RPS law since 1999, made changes in 2004, which required each utility serving retail customers to include 22.5% renewable energy in its electricity mix by 2021.[13]

Electricity suppliers were allowed to meet these requirements by investing in their own renewable energy generation or by purchasing renewable energy certificates (RECs). RECs are credited to renewable generators and represent the monetary value attached to the renewable nature of the electricity they generate. New Jersey's RPS statute issues RECs for renewable energy generated by customer-generators. However, New Jersey went a step further by allowing regulated utilities to apply RECs from customer-generators toward their RPS mandates *only* if those customers were also eligible for net metering. By linking net metering to the state's RPS mandates in this way, New Jersey created an economic incentive for regulated utilities to pursue aggressive expansion of the state's net metering program. Every new net metering customer becomes a

11 Ibid, Comment #24

12 New Jersey Regulation Text. NJAC 14:4-9.1, 9.2, 9.3, 9.4 thru 9.11 Adopted Rule, September 15, 2004. Board of Public Utilities. BPU Docket Number EX 03100795 Accessed August 3, 2006 via Westlaw (Comments and responses #23 and #24).

13 Ibid, Response #24

potential new source of renewable energy to help the utility meet its regulatory requirements.

- ***Part of a Package of Incentives***

New Jersey treated its net metering program as part of a broad package of incentives designed to encourage the adoption of renewable energy.[14] Recognizing that net metering alone is not sufficient to offset the high initial costs associated with on-site renewable energy generation, New Jersey adopted a variety of rebate and tax reimbursements to reduce capital costs even further.

In addition to tradable renewable energy certificates, New Jersey collected a "Societal Benefits Charge" on all public utility customers and adopted a broad-based rebate program that pays renewable generators a premium on each kilowatt of electricity generated by small solar, wind and sustainable biomass generators. The rebate is scaled to provide greater payment for initial kilowatts and less as generation increases. By making the rebate progressive in this way, New Jersey tilted the economic incentive to favor a larger number of small generators that would also be eligible for the state's net metering program.

Rather than institute a number of individual state subsidies, New Jersey linked tax incentive, progressive rebates and a broad-based net metering program to create market-based incentives for investment in small-scale renewable energy.

Features of New Jersey's Program

In addition to generous system size limits, New Jersey's net metering program includes specific components that help expand both the number of participating customers and the total amount of renewable capacity that is eligible.

- ***Streamlined Application Process***

14 Reilly, Mike. 2005. Making Energy While the Sun Shines – Jersey's Program a Model for the Nation. The Star Ledger August 22, 2005 p. 13.

A hallmark of New Jersey's net metering program is its streamlined and transparent application process. New Jersey designed its application regulations both to overcome customer concerns about the complexity of the process and to minimize the extent to which utilities may delay applications. Prior to New Jersey amending its program, the U.S. Department of Energy released research indicating that customers who encountered major delays in application processing ultimately were discouraged from participating in net metering.[15] To address this issue, the drafters of New Jersey's statute proposed a rule requiring utilities to respond promptly to customer applications. If a utility does not approve or deny a standard residential customer's application within 20 days of having received the application, the rule considered the application approved automatically.[16] Not surprisingly, utilities objected to this proposal and requested a longer time period to review applications.[17] Ultimately, New Jersey's lawmakers rejected an extended review period and adopted the 20-day rule.

- ***Simplified Interconnection Standards***

Interconnection standards govern the manner in which customers can connect to the power grid. Effective net metering legislation is only possible if the interconnection standards enable customer-generators to connect to the grid with minimum difficulty. The New Jersey BPU understood the importance of interconnection standards to net metering and adopted model standards developed by the Interstate Renewable Energy Commission (IREC) and National Association of Regulatory Commissioners (NARUC).[18] New Jersey's standards

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15 U.S. Department of Energy – Energy Efficiency and Renewable Energy. Overcoming Net Metering and Interconnection Objections New Jersey MSR Partnership. Million Solar Roofs Case Study. Accessed August 3, 2006 at http://www.nrel.gov/docs/fy05osti/38666.pdf.

16 New Jersey Administrative Code. Title 14. Board of Public Utilities. Chapter 4. Energy Competition. Subchapter 9. Net Metering and Interconnection Standards For Class 1 Renewable Energy Systems N.J.A.C. 14:4-9 (2006). (14:4-9.7 (o))

17 New Jersey Regulation Text. NJAC 14:4-9.1, 9.2, 9.3, 9.4 thru 9.11 Adopted Rule September 15, 2004. Board of Public Utilities. BPU Docket Number EX 03100795 Accessed August 3, 2006 via Westlaw (Comments #63 - #65).

18 New Jersey Regulation Text. NJAC 14:4-9.1, 9.2, 9.3, 9.4 thru 9.11. Proposed Rule. December 01, 2003. Board of Public Utilities. BPU Docket Number EX 03100795. Accessed August 3, 2006 via Westlaw.

allow all DG technologies to interconnect, do not require the customer to purchase additional insurance and impose a minimal application fee (which is waived altogether in certain cases).[19]

- ***Reduced Unnecessary Safety Requirements***

When New Jersey was establishing its net metering law in 2004, drafters recognized that many utilities were using safety concerns to require customers to install external disconnect switches that could be accessed easily by utility company workers. New Jersey's lawmakers suspected that the external disconnect switch might be redundant with safety mechanisms inherent in all certified inverters and feared that the requirement was acting as a disincentive to customers who wanted to install renewable energy systems.[20]

With a grant from the nationwide Million Solar Roofs campaign, the New Jersey Public Utilities Commission contracted with Chris Cook, an expert in interconnection standards, to investigate the issue. Cook thoroughly researched external disconnect switches and found that the switches were rarely, if ever, used by utility company workers and that they did almost nothing to protect the workers anyway.

In fact, Cook found that the external switch requirement may even be harmful to workers both by giving them a false sense of security and by requiring them to traverse private property to access the switches. In addition, the added expense of external switches created an incentive for customers to connect unauthorized systems that present a much greater safety concern to workers. An entire

19 Interstate Renewable Energy Council (IREC) "Connection to the Grid" Project. Interconnection Standards for Distributed Generation (Updated June 2006). Accessed August 10, 2006 at http://www.irecusa.org/connect/state-by-state.pdf

20 Information in this section is derived from: U.S. Department of Energy – Energy Efficiency and Renewable Energy. (September 2005). Overcoming Net Metering and Interconnection Objections New Jersey MSR Partnership. Million Solar Roofs Case Study. Accessed August 3, 2006 at http://www.nrel.gov/docs/fy05osti/38666.pdf.

underground movement of illegal interconnection has sprung up in some states as a result of such requirements.[21]

In the end, New Jersey's statute prohibited utilities from requiring unnecessary and expensive additional safety equipment. Pre-tested, off-the-shelf renewable units are certified as safe and the certification removes the necessity for additional equipment. By basing its statute on a thorough investigation of utility concerns, New Jersey helped pave the way for customer-friendly interconnection standards that better protect utility industry workers.[22,23]

- ***High System Size Limits***

New Jersey allows renewable energy systems up to 2 MW to be eligible for net metering, the highest limit of any net metering legislation in the nation. A high system size limit allows non-residential customers, who have greater loads than most residencies, to participate in net metering and gives business owners an incentive to install systems capable of generating the entire on-site demand. In New Jersey, many businesses and schools have taken advantage of the 2 MW limit and installed DG systems up to the allowable limit.[24] Because these non-residential customers consume larger amounts of power, their DG systems have the added benefit of significantly reducing demand on the transmission grid while furthering New Jersey's goal of expanding statewide production of renewable energy to 20% by 2008.

- ***Broad Customer Classes***

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21 See Home Power's guerilla solar archive. http://www.homepower.com/magazine/guerrilla.cfm

22 U.S. Department of Energy – Energy Efficiency and Renewable Energy. Overcoming Net Metering and Interconnection Objections New Jersey MSR Partnership. Million Solar Roofs Case Study. Accessed August 3, 2006 at http://www.nrel.gov/docs/fy05osti/38666.pdf.

23 Cook, Christopher. Interconnected PV - The Utility Accessible External Disconnect Switch. Accessed June 29, 2006 at www.e3energy.com/Extdisc.doc

24 New Jersey's Clean Energy Program. 2006. Supported Solar Installations. March 2006. Accessed August 3, 2006 at http://www.njcep.com/html/res-installed/solar-list.html.

High system size limits alone are not sufficient to enable commercial classes to participate in net metering programs. As mentioned, New Jersey's statute provides an expansive definition of "small commercial customers". Without this explicit customer class, commercial customers may have been restricted and the high system size limit would be rendered largely irrelevant since most residential customer-generators would never approach 2MW of capacity. New Jersey's statue allowed no room for regulatory interpretations that would exclude larger customer-generators.

Customer Class: A Problem in Indiana

ITAMCO, a family-owned company with 75 employees in a 100,000-square-foot factory, "where precision work requires costly air conditioning," argued that on-site power generation would reduce operational costs and make the company more competitive. [25] David Neidig, marketing VP at ITAMCO, explained that the company's interest in participating in net metering is partly because it "is a great way for (ITAMCO) to be more competitive as an Indiana manufacturer, and at the same time be environmentally conscious, and be a good neighbor of the community." [26] ITMACO further argued that, because a 1.5 MW wind turbine would cost the company about $1.5 million, net metering is "essential to (ITAMCO's) cost equations." In the end, the Indiana Utility Regulatory Commission's final net metering rules limited eligible customer classes so that industrial customers like ITAMCO were unable to benefit from net metering.

- ***Monthly Banking of Excess Generation***

Our analysis found that monthly banking of net excess generation is one of the most important factors in the effectiveness of any net metering program. For net metering customers, the grid acts like an energy bank; they deposit energy into the grid when their system produces more than they consume and withdraw energy when demand exceeds what their systems can supply. To be successful, a net metering program must facilitate banking so that customer-generators can receive credit for excess energy generated during the seasons when renewable output is highest and apply it toward their consumption when output is lower.

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25 DeAgonstino, Martin. Company looks to wind for savings; Bill benefits small-scale power generators. South Bend Tribune (Indiana), Monday Marshall Edition. Feb. 16, 2004. P. C1. Accessed via LexisNexis®.

26 ibid.

New Jersey's statute facilitates month to month banking in two ways. First, for the first 12 months of a customer's participation, the utility is required to credit customers for excess generation at the retail rate of electricity. This is important because the excess power contributed to the grid by net metered customers is sold to other consumers at the retail price. If not for monthly banking, regulated utilities would get to pocket the profits from renewable energy that they did not create. By passing those profits on to the generators of renewable energy, New Jersey's net metering program provides a strong incentive for customers to purchase systems large enough to produce an abundance of clean power. These larger systems, in turn, help reduce demand on the transmission grid and save the utility the added expense of costly additional plats that come online only during periods of peak demand.

One potential limitation of New Jersey's program is that at the end of the initial 12-month period, the added economic incentive created by the requirement to *credit* net excess generation at the retail rate disappears. From that point on, utilities are required to *purchase* net excess generation at the wholesale rate (or "avoided cost"). That is, no renewable energy generator can receive actual *payment* for excess energy at more than the wholesale rate[27]. Since the wholesale rate of electricity is always less than the retail rate, the incentive to install systems that generate more than on-site demand is diminished.

- ***Does not limit total capacity***

Some states place a cap on the total amount of electricity that can be generated by all net metered systems (i.e. 0.1% of a utility's total capacity). This limits both

27 It is questionable whether it is even legal for states to pass legislation that would require utilities to purchase net excess generation at anything other than the avoided cost. The federal Public Utilities Regulatory Policies Act (PURPA) requires utilities to purchase electricity from qualified renewable energy facilities at the avoided cost and states that mandate any other price may be deemed in violation of PURPA. Courts have yet to settle whether states have ultimate jurisdiction to determine the rate at which net metered electricity must be purchased or if net metered customers constitute PURPA qualified facilities, in which case Congress would have to amend PURPA to allow states to set rates that exceed avoided costs.

the number of customers who will participate as well as the total amount of electricity produced by renewable DG systems. Placing a cap on the number of customers who can net meter is counter-productive, potentially impeding the growth of the very technologies net metering is designed to promote. New Jersey places no limit on capacity from net metering customers and has helped spark a robust DG market as a result.

What happened in California

California amended its net metering statute in 2002. The original law required utilities to provide net metering to customers until the total energy generated by net metering meets 0.5% of the utility's aggregate peak demand. The state adopted this cap as a concession to utility companies, and justified it "due to the unknown impacts of increased customer-owned generation on the grid, particularly after the maximum capacity size was increased from 10 KW to 1 MW".[28] By June 2006, the three major California utility companies (PG&E, SCE and SDG&E) were all close to reaching this cap, and some experts estimated the cap would have been met before the end of the year.

If the aggregate number of customers happed to reach the maximum enrollment, the utilities would have no longer had the responsibility to allow customers to net meter according to the California standards. At the time, many in the solar industry feared that there would have been a significant decrease in demand for PV systems.[29] [30]

In partial response to the enrollment cap conundrum, the state government recently passed SB1, the Million Solar Roofs Bill. This bill raised the enrollment cap to 2.5% of a utility's aggregate peak demand along with additional funding for solar programs.

Alaska can learn from California's example: net metering success will cause the enrollment cap to become a barrier to new renewable energy generation. Many states, including New Jersey, Connecticut, and Massachusetts, avoid this problem by not specifying a limit at all.

- ***Inclusive Definition of Eligible Technologies***

One of the greatest assets of New Jersey's net metering law is its inclusive definition of eligible technologies. Solar (photovoltaic) and wind power are the

28 California Public Utilities Commission Energy Division. 2005. Update on Determining the Costs and Benefits of California's Net Metering Program as Required by Assembly Bill 58. California Public Utilities Commission Energy Division

29 Krauss, Leah. 2005. California Nears Net Metering Cap. United Press International. Accessed June 29, 2006 at http://seia.org/solarnews.php?id=113

30 Pearson, Aria. 2006. It's Nearly Lights Out for PG&E's Solar Power Buybacks. Santa Cruz Sentinel. Accessed June 29, 2006 at http://www.renewableenergyaccess.com/rea/news/story?id=45118

two most popular distributed generation technologies for residential use, and some net metering policies include only those two technologies. New Jersey's law is inclusive of a diversity of renewable technologies (fuel cells, biomass, small hydro, landfill gas, tidal and wave energy), which is important for two reasons:

One of the most important goals of net metering is to encourage the adoption and use of distributed renewable resources. While most state programs include common renewable technologies like solar PV and wind, New Jersey's program allows fuel cells, biomass, small hydro, landfill gas and tidal and wave energy This broad definition of renewable energy helps spur the further development of novel ways of harnessing diverse renewable sources of distributed generation.

An inclusive definition of renewable energy also facilitates a more diverse net metering customer base. For example, customers involved in agriculture can use biomass, like wood pellets and switch grass, in ways that residential customers might not. It is important to include these customers in a net metering program since they use substantially more energy than residential customers and their participation can lead to more significant reductions in demand.

Unwarranted Utility Concerns

Most utilities perceive net metering programs as revenue-losers rather than demand-reduction strategies, and have lobbied at the state level for unnecessary restrictions, burdensome procedures and excessive fees that limit participation. In many states the regulatory barriers established at the behest of utilities have effectively thwarted the original intentions of the net metering programs.

By claiming that net metering causes non-participating customers to subsidize net metered customers (an argument known as 'cross-subsidization'), many utilities justify limiting net metering in a crude attempt to spread the fixed costs of transmission and distribution equitably among ratepayers. To begin with, many

utilities already 'unbundle' fixed costs by charging an initial connection fee and/or delineating separate transmission and distribution charges on a customer's bill. Under these circumstances, the fixed "transmission, distribution and overhead" costs associated with managing the grid are not subsumed by the retail rate of electricity and thus the cross-subsidization argument is not a justification for denying net metered customers the full credit for the electricity they generate.

Compensation at *less* than the retail rate affects a worse cross-subsidy. Empirical studies demonstrate that renewable energy systems (particularly solar PV systems) generate excess electricity *during* peak demand periods. Far from getting credit for excess electricity when it is "cheap" and applying the credit when electricity is "expensive", in practice the opposite has been the case. By providing excess electricity to the grid during periods of peak demand, the net metered customer not only is helping the resource-constrained utility meet its demand, but is offsetting the most expensive type of electricity, that provided by pricey "peaking facilities" that come online only when base loads are exceeded. If the utility fails to compensate net metered customers for excess generation at the retail price of electricity, the utility essentially will be forcing net metered customers to subsidize grid reliability and efficiency for customers who have not invested in net metered systems. Without paying for any additional infrastructure investment (whose cost is spread among all ratepayers), the utility is simply commandeering the excess energy generated by net metered customers, selling it to non-net metered customers and pocketing the profit.

Cross-subsidization already occurs as a result of fixing transmission costs in the first place. Presumably, customers benefit from the transmission grid in ways not reflected by their electricity bill. It costs much more to transmit electricity to some areas than others. Customers who consume electricity close to where it is generated subsidize the transmission of electricity to customers who reside far from power plants. Retail prices do not reflect the unequal costs of transmission lines and load losses. Instead, all customers are charged as if they contributed equally to transmission expenses. Even today, transmission system controllers

must use brownouts and rolling blackouts rather than electricity price to manage demand in excess of capacity. These crude tools require some ratepayers to subsidize electrical reliability for others. And yet the Companies remain largely silent about these inherent inequities until the issue of net metering is raised.

Whatever merit exists in the cross-subsidization argument stems entirely from the fact that utilities enjoy a monopoly on the transmission and distribution systems that all customer-generators are required to use in order to sell electricity to other consumers. Since this monopolization stems from policy made ostensibly to promote the public good, policymakers may surely change the policy in pursuit of even greater public good. Since all New Yorkers benefit from the increased reliability, efficiency and cleanliness of distributed generation, the PSC may find that it is good public policy to require customers who choose not to decrease their electricity demand by investing in on-site generation to subsidize those that do. Indeed, the Companies themselves acknowledge that crediting net excess generation at the utility's full retail rate has helped achieve the energy conservation goals of PURPA.

Individual states that have been the most effective at promoting clean energy have treated net metering as a demand-reduction strategy that is part of a broad system of incentives to encourage the adoption of renewable energy technologies. Because renewable systems typically produce the most electricity during hours of peak demand (solar panels, for instance, generate the most electricity in the afternoon, when demand on the grid is greatest), net metered customers generally consume electricity from the grid during off-peak hours. Therefore, net metering should be perceived as a benefit to regulated utilities by reducing peak demand at the times when the grid is most strained.

An effective net metering program is vital to the promotion of renewable energy and their markets. Net metering encourages renewable energy growth, increased energy reliability, and reduces peak load demand. With climate change already

affecting Alaska, the state has much to gain from the creation of a net metering program that provides vital economic incentives for customers to invest in renewable energy.

Below, please find NNEC's draft model statute developed in conjunction with Michael Dworkin and the Vermont Law School's Institute for Energy & the Environment. The finalized version will be included in our report.

Respectfully submitted,

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NET METERING STATUTE

Subchapter 1: Scope

This Chapter sets forth net metering requirements and interconnection standards that apply to Retail Utilities operating within the state.

Subchapter 2: Definitions

The following words and terms, when used in this Chapter, shall have the following meanings, unless the context clearly indicates otherwise.

"Annualized period" means all billing periods within a single year. A customer-generator's first annualized period begins on the first day of the first full billing period after the customer-generator's facility is interconnected and is generating electricity.

"Applicant" means a person who has filed an application to interconnect a customer-generator facility to an electric delivery system.

"Customer-generator" means a residential, commercial, industrial, nonprofit, school, utility, agricultural, institutional, local government, state government, and federal government customer that generates renewable electric energy on the customer's side of the meter.

"Customer-generator facility" means the equipment used by an customer-generator to generate, manage, and monitor electricity. A customer-generator facility includes an electric generator and/or an equipment package, as defined herein.

"Electric delivery system" means the infrastructure constructed and maintained by a Retail Utility, as defined herein, to deliver electric service to end-users.

"Group System" means a group of physically contiguous customers located in a single electrical service provider territory that has elected to combine meters as a single billing entity in order to offset that billing against a net metered generation facility located on property owned by a group member and physically contiguous to the group members.

"Net metering" means that the customer-generator is billed according to the difference between the amount of electricity supplied by the Retail Utility in a given billing period and the electricity delivered from the customers' side of the meter using renewable energy systems, with customer generation in excess of electricity supplied credited over an annualized period.

"Renewable Electric Energy" means energy generated through the use of such resources as: (1) Solar Thermal Electricity, (2) Photovoltaic, (3) Landfill Gas, (4)

Wind, (5) Biomass, (6) Hydroelectric, (7) Wave or Tidal Power, (8) Geothermal Electricity, (9) Waste-toEnergy, (10) Fuel Cells using Renewable Fuels.

"Retail Utility" means any utility offering retail electric service in the State.

"Service entrance capacity" means the rating of the customer's electric service, determined by multiplying:

(1) the voltage provided to the customer by the Retail Utility
times
(2) the ampere rating of the customer's primary over-current protection device (fuse or circuit breaker)
times
(3) the appropriate multiplier for multi-phase service and generators.

Subchapter 3: Net Metering General Provisions

(a) All Retail Utilities shall offer net metering to customer-generators with renewable energy generation and that are interconnected with the Retail Utility pursuant to interconnection rules adopted pursuant to Section 1-1.4, provided that the generating capacity of the customer-generator's facility meets both of the following criteria:

1. The rated capacity of the generator does not exceed 10 megawatts (MW); and
2. The rated capacity of the generator does not exceed the customer's service entrance capacity.

(b) The Retail Utility shall develop a net metering tariff that provides for customer-generators to be credited in kilowatt-hours (kWh) at a ratio of 1:1 for any excess production of their generating facility that exceeds the customer-generator's on-site consumption of kWh in the billing period following the billing period of excess production. However, any excess kWh credits shall not reduce any fixed billing period customer charges imposed by the Retail Utility.

(c) The Retail Utility shall carry over any excess kWh credits earned under subsection (b) and apply those credits to subsequent billing periods to offset any customer-generator consumption in those billing periods until all credits are used or the end of the annual billing cycle is reached.

(d) At the end of each annual billing period, the Retail Utility shall compensate the customer-generator for any excess kWh credits at that customer-generator's otherwise applicable retail rate for marginal electric energy usage.

(e) If a customer-generator terminates its service with the Retail Utility [[*or switches electricity suppliers*]], the Retail Utility shall compensate the

customer-generator for any excess kWh credits at that customer-generator's otherwise applicable retail rate for marginal electric energy usage, over the billing period immediately prior to termination of service.

(f) A customer-generator facility used for net metering shall be equipped with metering equipment that can measure the flow of electricity in both directions at the same rate. For customer-generator facilities less than 10 kilowatts (kW), this may be accomplished through use of a single, bi-directional electric revenue meter that has only a single register for billing purposes.

(g) A customer-generator may choose to use an existing electric revenue meter if the following criteria are met:

1. The meter is capable of measuring the flow of electricity both into and out of the customer generator's facility at the same rate and ratio; and
2. The meter is accurate to within plus or minus 5 percent when measuring electricity flowing from the customer-generator facility to the electric distribution system.

(h) If the customer-generator's existing electric revenue meter does not meet the requirements at (g) above, the Retail Utility shall install and maintain a new revenue meter for the customer-generator, at the Retail Utility's expense. Any subsequent revenue meter change necessitated by the customer-generator, whether because of a decision to stop net metering or for any other reason, shall be paid for by the customer-generator.

(i) The electric distribution company shall not require more than one meter per customer-generator. However, an additional meter may be installed under either of the following circumstances:

1. The Retail Utility may install an additional meter at its own expense if the customer-generator consents; or
2. The customer-generator may request that the Retail Utility install a meter, in addition to the revenue meter addressed in (g) above, at the customer-generator's expense. In such a case, the Retail Utility shall charge the customer-generator no more than the actual cost of the meter and its installation.

(j) A customer-generator owns the renewable energy credits (RECs) of the electricity it generates, and may apply to the state regulatory commission or its authorized designee for issuance of solar RECs (S-RECs) or RECs as appropriate and based on actual on-site electric generation, or the calculated estimate for generators less than 10 kW in rated capacity and as further defined in Section [[*reference any state renewable portfolio standard (RPS) requirements here*]].

(k) A Retail Utility shall provide to net-metered customer-generators electric service at non-discriminatory rates that are identical, with respect to rate structure, retail rate components and any monthly charges, to the rates that a customer-generator would be charged if not a customer-generator.

(l) A Retail Utility shall not charge a customer-generator any fee or charge; or require additional equipment, insurance, or any other requirement not specifically authorized under this sub-section or the interconnection rules authorized by Section 1-1.4, unless the fee, charge or other requirement would apply to other similarly situated customers who are not customer-generators.

(m) Each Retail Utility shall submit an annual net metering report to the state regulatory commission. The report shall be submitted by the end of each calendar year, and shall include the following information for the previous compliance year:

1. The total number of customer-generator facilities;
2. The total estimated rated generating capacity of its net-metered customer-generators;
3. The total estimated net kilowatt-hours received from customer-generators, expressed as both an aggregated absolute amount and, also, as a percentage of total kilowatt-hours provided to retail customers by the Qualifying Retail Utility;
4. The total estimated amount of energy produced by the customer-generators; and
5. Outreach and information efforts engaged in by the Qualifying Retail Utility in order to inform customers about the availability of net metering service pursuant to this chapter.

Subchapter 4: Other qualifying customer-generators [[optional]]

(a) [[*Anaerobic Digestion/Biogas??*]]
(b) Biomass generators that run on-peak at 100% capacity and qualify for an air permit or otherwise meet criteria established by the Department of Environment.
(c) Combined heat and power (CHP) generators with efficiency greater than 2 times system average (and qualifies for air permit or otherwise meet criteria established by the Department of Environment)
(d) Group Net Metering Systems that consist of a group of physically contiguous customers located in a single electrical service provider territory that has elected to combine meters as a single billing entity in order to offset that billing against a net metered generation facility located on property owned by a group member and physically contiguous to the group members.

Subchapter 5: General Provisions

(a) If a net metering interconnection has been approved under the interconnection rules Section [*reference state interconnection rules here*], the Retail Utility shall not require a customer-generator to test or perform maintenance on its facility except for any manufacturer-recommended testing or maintenance.

(b) A Retail Utility shall have the right to inspect a customer-generator's facility during reasonable hours and with reasonable prior notice to the customer-generator. If the Retail Utility discovers that the customer-generator's facility is not in compliance with the requirements of the interconnection rules in Section [*reference state interconnection rules here*], the requirements of IEEE Standard 1547, and the non-compliance adversely affects the safety or reliability of the Retail Utility's or other customers facilities, the Retail Utility may require the customer-generator to disconnect the customer-generator facility until compliance is achieved.

Subchapter 6: Public Outreach and Understanding

(a) The state regulatory commission shall conduct a comprehensive statewide public outreach process regarding net metering and interconnection, [[*focused on promoting renewable electric energy*]]. The state regulatory commission shall develop and implement a public outreach and understanding process through a request for proposals that meet the following requirements:

1. to provide a strong information dissemination component, in order to develop a shared foundation of credible information that may serve as a basis for engaging in a meaningful dialogue;
2. to engage a broad base of citizens, including those who are currently engaged in energy issues as well as those who have not yet been engaged;
3. to reach throughout the state and to establish a model for educating the public about the electric energy supply challenges facing the state.

(b) [[*In a manner consistent with available resources and consistent with subsection (a) of this section the state regulatory commission shall assist communities and community members to identify local and regional energy opportunities that will fit into the community, and to assist communities interested in developing renewable electric energy for the purpose of net metering.*]]